

“dance” takes place with the two birds almost in contact with one another, and the female at times joining in. When the female moves off, the male follows, and the performance may be repeated.

The finding of *Amadina* actively usurping almost complete nests of *Ploceus velatus* and *Pseudonigrita arnaudi* suggests an evolutionary trend away from “old nest utilisation” towards an aggressive “usurpation behaviour” or “nest parasitism” as described for *Passer eminibey* by Payne (1969). I feel that utilisation of old vacated or abandoned nests is strictly not “nest parasitic behaviour” as suggested by Payne. As there is no definite evidence that *Amadina* ever makes its own nest, the use of old nests is an obligate behaviour, more primitive than the trend to “nest usurpation” now described. Thus the case of *Amadina* more or less parallels that of *P. eminibey* except that the latter does make its own nest as well as utilising vacated or abandoned nests and resorting to “nest usurpation”, not only confined to *P. arnaudi*, for the nests of *Ploceus rubiginosus* Rüppell, *P. intermedius* Rüppell, *P. spekei* (Heuglin) and *P. velatus* are also taken over during or just after construction: see MacInnes (*Journ. E. Afr. Nat. Hist. Soc.* 47/48, 1932/33: 134), Fuggles-Couchman & Elliott (*Ibis*, 1946: 345), Betts (*Ibis*, 1966: 528) and myself (in prep.)

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## On the apparent movements of *Cossypha natalensis*

by P. L. Britton

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The Red-capped Robin-Chat *Cossypha natalensis* occurs rather disjointedly over much of eastern and southern Africa (not the south-west) and is typically a lowland bird of gallery forests and thickets, rarely above 1500 m. There is much disagreement on the number of races recognised although, of the three recognised by White (1962), there is almost unanimous agreement on two, *larischi* Meise and nominate *natalensis* Smith. But within White's *intensa* Mearns, Clancey (1959) recognises *garguensis* Mearns, *hylophona* Clancey and *egregior* Clancey. Ripley (1964) recognises *tennenti* Williams but Clancey (1967) considers it probably synonymous with *garguensis*. Hall (1959) and Irwin & Benson (1967) did not split *intensa* although Clancey (1967) says that he and Irwin have now reached virtual agreement that *intensa* and *hylophona* are in all probability not synonymous, and the arrangement of Clancey (1959) is

followed by Benson, Brooke, Dowsett & Irwin (in press). Traylor (1962) could not recognise *hylophona* but recognised *garguensis*, extending the range of Clancey's (1959) concept of *garguensis* to central Uganda. As I have not examined specimens critically I prefer not to comment on the taxonomy of this very difficult species and I follow Clancey (1959), except that following Traylor (*op. cit.*) I consider that *garguensis* occurs south to about the equator in Uganda.

That this species might be to some extent migratory was first suggested by Pakenham (1948). More recently, Chapin (1953), Dekeyser & Derivot (1966) and Hall & Moreau (1970) have suggested that birds north of the Congo forest may be migrants but Traylor (1962) considered a bird from Yaoundé possibly referable to an undescribed race rather than a migratory *larischi*. In southern Africa, Oatley (1959, 1966) has documented movements of nominate *natalensis* and Clancey (1967) has said that "so many populations are now known to be highly migratory, and most birds taken in Zambia are almost certainly from populations which breed elsewhere". Benson & Irwin (1967) showed that some 75 % of Zambia specimens were collected between September and November so that "the possibility of a partial long-distance migration out of Zambia cannot be discounted".

In view of the considerable speculation on the movements of this elusive species it seems desirable to examine all populations whether they are believed to be migratory or not. I have therefore analysed by months 589 dated specimens from the collections of the institutions listed and the literature as well as utilising the few available sound and ringing records. No data from the Republic of South Africa are considered as the situation with nominate *natalensis* is fairly clear (see Clancey 1964 and Oatley 1959, 1966). The only nominate birds considered are non-breeders in the Mozambique littoral. It is believed that some 95 % of the extant dated specimens of *Cossypha natalensis* from outside South Africa are summarised in the Table.

#### *C. n. garguensis*

With the exception of one bird in August in post-juvenile moult, all birds from southern Ethiopia, southern Sudan and Neng, Kenya (one bird), and hence all birds from north of 2° N, were recorded between 15th November and 28th May. The remaining birds considered, from Uganda and Mt. Elgon (Kenya) between the equator and 2° N, exhibit no obvious pattern. There are three records of egg-laying between Kampala and Jinja, in the southern part of its range, two in April and one in May (Belcher 1919, Jackson 1938, Brit. Mus. (Nat. Hist.) collection). There is no ecological reason for a partial movement north and north-east out of Uganda after breeding and the scant records from north of 2° N may be biased. But the single bird from Neng (2° 15' N, 38° 32' E) in November may well be a migrant as, according to the Survey of Kenya 1: 1 million map, Neng (not marked) would be in larva desert east of Marsabit. Cave & Macdonald (1955) and Urban & Brown (1971) consider it resident in southern Sudan and southern Ethiopia respectively. The type of *garguensis* from the Matthews Range, Kenya and the six birds from Mt. Endau, Kenya described as *tementi* are not considered as they are from considerably further south than other *garguensis*.

#### *C. n. intensa*

A large series from the Kenya coast exhibits no obvious pattern except for a comparative lack of records between January and April. There may be a partial movement inland or north at this time as P. R. Colston (pers. comm.) netted only two in Sokoke Forest in April 1970 and I failed to net it at all in

TABLE

Distribution of *Cosyphba natalensis* records by months in different areas (South Africa excluded).

	J	F	M	A	M	J	J	A	S	O	N	D	Totals
1 S. Ethiopia, S. Sudan, Neng (Kenya)	1	1	3	1	1	1	—	1	—	—	5	4	17
2 Uganda north of equator & Mt. Elgon (Kenya)	1	—	1	9	1	3	1	—	1	5	11	5	38
3 Kenya coast: Sokoke Forest	2	—	1	2	18	1	47	17	—	—	15	1	104
4 Kenya coast: Witu to Tanzania border, excluding Sokoke Forest	—	1	2	1	3	—	1	3	7	2	9	11	40
5 Tanzania coast	1	3	—	—	3	1	7	6	4	2	2	2	31
6 S. W. Kenya	—	1	—	—	2	—	1	1	—	—	—	—	7
7 Kenya/Tanzania border, Kilimanjaro-Usumbaras, including Teita & Voi	3	6	3	1	4	12	20	2	4	1	5	9	70
8 Tanzania, 36-38° E, south of 5° S.	2	—	—	1	—	3	5	3	1	2	3	—	22
9 Tanzania west of 33° E, Uganda south of equator, Kivu, Ruanda, Burundi	1	—	—	—	1	3	4	5	4	6	4	1	29
10 Katanga (Congo) & Moxico (Angola), 7-12° S.	—	1	—	4	4	4	9	5	1	—	—	—	28
11 Zambia north of 12° S (N. Mwinilunga, Mweru Marsh, Lake Mweru)	—	—	—	—	3	—	—	2	7	5	1	—	18
12 Southern & western Zambia; Kariba Basin, Rhodesia; Ninda, Angola	—	—	1	1	—	1	—	—	—	11	8	3	25
13 Southern Malawi & bordering Mozambique	—	3	—	4	—	2	1	3	—	1	3	11	28
14 Eastern Rhodesia & Gorongosa Mt. (Mozambique)	6	2	5	4	—	1	1	1	4	11	11	10	56
15 Mozambique: <i>hylaphona</i>	—	—	—	5	3	2	8	9	—	—	—	—	27
16 Mozambique: <i>egregior</i>	—	—	—	1	—	—	—	—	5	—	—	—	6
17 Mozambique: nominate	1	—	—	2	2	—	—	2	1	—	—	—	8
18 Mozambique: not raced	—	—	—	—	1	5	—	—	—	—	2	—	8
19 <i>Larielhi</i> : south of 12° S (Mossamedes & Huila, Angola)	2	2	—	—	—	—	—	—	1	4	—	4	13
20 <i>Larielhi</i> : elsewhere	—	1	1	5	3	2	7	4	4	1	7	4	39

Notes: 9. A bird from Kabinda (Lomami), Congo in November is included.

15, 16. Racial determinations are by Clancey (*in litt.*).

15-18. With the exception of a June bird from Netia, all are from south of the Zambezi River.

The following are excluded: Limpopo River, Rhodesia *egregior* (June) and nominate (July); Zambezi River below Chiirundu *egregior* (September (2), January); Malawi north of 12° S March (3), April (2), July, November; central Tanzania, March, September, November; Mt. Endau, Kenya (six birds, January-February); Juba and Tana Rivers (Somalia & Kenya), not coast, 13 birds, January-June (see text).

Sokoke Forest and nearby Mida in two brief visits in April (1969 and 1971). Colston's birds (22nd and 23rd April) were both males and weighed only 29 and 32 g, less than the average of 34.2 g (range 29–39) for 32 males from coastal Kenya. Leslie Brown (*in litt.*) visits his plot at nearby Watamu each April, August and December but records this species only in August, so that any such movement may take place before January, and there is a comparative lack of records from Sokoke Forest in December. The few Tana River (Kenya) and Juba River (Somalia) birds away from the coast are in January (3), February (4), March (2) and June (4). However, as with *garguensis*, the possibility of any movement is speculative as an ecological explanation is lacking.

Birds from coastal Tanzania exhibit no obvious pattern. Vaughan (1929–30) considered Zanzibar birds resident but Pakenham (1948) put forward evidence of a movement of at least 25 km. According to Clancey (1959) Zanzibar birds are *hylophona* which seems rather unlikely, so that they are listed here for convenience. Some of the birds from the immediate hinterland of Tanzania considered below under *hylophona* might belong here as some of these are considered *intensa* or intergrades between *intensa* and *hylophona* by Clancey (1959).

#### *C. n. hylophona*

The birds from S. W. Kenya, the Kenya/Tanzania border from Kilimanjaro to the Usambaras including Teita and Voi, and Tanzania south of 5° S, between 36° and 38° E, exhibit no obvious pattern. However, of 26 specimens from Moshi (different years, different collectors), 24 are in June and July including six immature birds, and one came to a lighted room of a house at Amani on the night of 13th May (Sclater & Moreau 1933) so that there may be some movement in this border area. Certainly this would correlate with the presence of birds in Tanzania west of 33° E, Uganda south of the equator, Ruanda, Burundi and Kivu (Congo) only from June to November (with one in December, one in January and one on 27th May). With 26 out of 29 of these latter birds falling in the period June to November there seems little doubt that they move elsewhere from about December to May, but where? Although birds from further south in the southern Congo and Moxico (Angola) probably move south into Zambia to breed (see below) this is unlikely to be the explanation here as, if so, records would fall in the period April to September. The scattered records from central Tanzania are inconclusive and the off-season area cannot be ascertained from present knowledge.

That Zambia birds are not resident is already documented (Benson & Irwin 1967) but the off-season area is unknown. An examination of 28 specimens from Katanga (Congo) and Moxico (Angola) between 7° and 12° S shows that all but one fall in the period 4th April–24th September. The 25 records from southern and western Zambia, the Kariba Basin, Rhodesia and Ninda, Angola fall almost entirely between October and April. The vast majority are in October and November and probably refer to passage birds. Certainly, in the two years which I spent at Balovale my only record was on 13th and 14th October (Britton 1970) while Dowsett (1966) recorded a bird in atypical habitat at Lochinvar on 25th October and (*in litt.*) regards it as a definite migrant there from September to November. According to Farkas (1969), M. E. W. North recorded the song at the beginning of the breeding season near Mambova, several miles from the nearest riverine forest of the Zambezi. North went to Mambova with C. W. Benson who informs me that



the recording was made on or about 10th January in a locality where there are dense thickets under *Baikiaea* forest, so that it was well into the breeding season in not unusual habitat. Traylor (1965) collected a bird just completing post-juvenile moult (not wings or tail) on the Liuwa Plain far from normal habitat in late October.

The only breeding record given by Benson *et al.* (in press) is of an immature bird taken at Kafue Gorge on 4th March, probably from an egg laid in January (original ref. no. 334 therein). Breeding may well be confined to the extreme south and south-west of Zambia, especially the Zambesi Valley from which there are sound records between Victoria Falls and the Chobe confluence, on both sides of the river, being confined to September-December on the Rhodesia side (Benson *et al.* in press, Irwin *in litt.*). Benson *et al.* (in press) record gonads active in October-December, but I have ignored gonad activity as an indicator of breeding in this paper. Though helpful in assessing the time of breeding, this may well take place in a geographically distant area. The Ninda bird is an immature, probably from an egg laid in early November (Benson & Irwin 1967).

Zambia north of 12° S is considered separately, as geographically and ecologically these areas are closer to Moxico and Katanga; especially the north of the Mwinilunga District. Fourteen of the 18 records available fall between 29th August and 16th October, and the remaining four are in November and May, indicating passage to breeding areas further south. Only that, being closer to the non-breeding area, birds pass through earlier before breeding and later after breeding than is the case in southern and western Zambia. Benson *et al.* (in press) note that it was abundant in gallery forest at Salujinga (Mwinilunga) in May when it was highly uncommon at Mayau at 12° 45' S. They have speculated on the possibility that northern Mwinilunga birds represent an undescribed race, but in view of these apparent movements I consider this unlikely. However, having read this paper, Benson (*in litt.*) considers it possible that the relatively equable northern Mwinilunga environment holds a resident breeding population in addition to passage birds, thus paralleling the case in *larischi* to the west (see below). He recorded it at Salujinga from 17th to 24th March 1963 although he did not record it in November 1964 (not that this necessarily reflects a true absence). Ref. 332 in Benson *et al.* (in press) mentions gonad activity in two males from northern Mwinilunga in October but as I have already pointed out breeding may take place elsewhere. It is not clear where seven birds from northern Malawi (north of 12° S) in March (3), April (2), July and November belong (these include, according to Benson, *in litt.*, four of his specimens from Chinteché in the Transvaal Museum).

There is little doubt that birds breeding in southern and south-western Zambia, the adjacent areas of Angola, and the Kariba Basin and Zambezi Valley above Victoria Falls, Rhodesia spend the dry season mainly north of 12° S, in Katanga (Congo) and Moxico (Angola), but the lack of birds on return passage in March-May is surprising. They clearly commence their post-nuptial moult before arriving in the non-breeding area as the three Zambia (Kalalua, Semende, Salujinga) April-May adults in the Livingstone Museum collection are in moult (Dowsett *in litt.*). Post-nuptial moult is not otherwise documented but according to Farkas (1969) post-juvenile moult lasts from the third to the sixth month, although Traylor (1965) recorded a young bird incompletely moulted in late October. Many of the rains visitors to Zambia originate from further north so that the off-season area is not

entirely unexpected. However, it might have been thought to be the Mozambique littoral where two other species recently shown to be largely rains visitors to Zambia (*Campephaga phoenicea* and *Schoenicola platyura*, Benson *et al.* 1970, Brooke 1966) are believed to spend the dry season, but on the contrary is to the northward (see above).

Southern Malawi and adjacent Mozambique birds exhibit no obvious pattern and there may be some confusion as Clancey (1959) considers some southern Malawi birds *intensa*. Belcher (1930) records nests at Soche, near Blantyre, on 16th and 24th November. Fifty-three of the 56 birds from eastern Rhodesia and Gorongoza Mt. (Mozambique) fall in the period September to April and 17 records of egg-laying fall in the period October to January (R. K. Brooke *in litt.*). Correlated with this, 27 records of *hylophona* from the Mozambique littoral fall between April and August. The altitudinal movement of eastern Rhodesia birds to the Mozambique littoral in the cold weather (dry season) is thus well established although Irwin (1957) recorded it on the Pungwe River at c. 680 m in both November and July.

#### *C. n. egregior*

A confusing taxon which is presumably resident. Records are too few to analyse and they are rather widely spread: mainly the Mozambique littoral but also the Zambezi River below Chirundu (both sides) and the Limpopo River (Rhodesia).

#### *C. n. natalensis*

For a fuller discussion of movements in this form see Oatley (1959, 1966). A non-breeding visitor to the Mozambique littoral with 7 out of 8 specimens between April and September. The anomalous January specimen is "a pale bird like the ones from Natal" (Mrs. E. H. Stickney *in litt.*) so that it presumably belongs here. Nominate *natalensis* should be in its breeding area (mainly Natal) from October to April which correlates well with all but one of the Mozambique birds. There is also a bird from the Limpopo River, Rhodesia in July. It is worth noting that Clancey (1967) collected wintering *hylophona* and *natalensis* alongside *egregior* near Macia, southern Mozambique in September.

#### *C. n. larischi*

An examination of birds from south of 12° S shows that all 13 fall in the period 30th September–5th February although no obvious pattern is apparent in the remaining 39 birds. It may well be that those breeding south of 12° S (in Mossamedes and Huila, Angola) move north in the dry season (see above, *hylophona*, Zambia) but that birds breeding north of 12° S are largely resident. The anomalous Yaoundé bird (on 25th March) could be explained as "over-shooting" on its journey north but this is speculative. The four plots in Hall & Moreau (1970) north of 5° N and between 15° and 25° E must be disregarded (Hall *in litt.*).

Traylor (1962) considers a male from Brazzaville similar to his east Angola birds (i.e. *hylophona*). As this locality is well within the range of *larischi* and the late Dr. A. De Roo (*in litt.*) considers a bird from nearby Kinshasa *larischi*, these specimens, and two others from Brazzaville, are listed as *larischi* in the Table.

#### Summary and Conclusions

*Cospyha natalensis* is wholly or partly migratory in several parts of its somewhat disjointed range so that its breeding range is still more fragmented. Birds breeding in extreme southern and south-western Zambia, and adjacent border areas of Rhodesia and Angola, move north of 12° S in the dry season as probably do the birds of Mossamedes and Huila in western Angola. Birds

breeding in eastern Rhodesia and on Gorongosa Mt. move eastwards into the Mozambique littoral in the cold weather (dry season) as do some birds from eastern South Africa and, perhaps, some birds from southern Malawi. There may also be a resident form in the Mozambique littoral.

Elsewhere in eastern Africa, north to about 8° N, there are probably movements in most areas but these are not clear-cut and are hence poorly understood. Ecological explanations are lacking. The virtual absence of birds in western Tanzania, southern Uganda, Kivu, Ruanda and Burundi from December to May, together with evidence of movements in the Moshi/Amani area in May/June, indicates a long-distance movement of some sort, but an off-season area cannot be found. Some birds breeding in central Uganda may move north and north-east into southern Sudan and southern Ethiopia after breeding while coastal Kenya and Somalia birds may have a partial movement north or inland (along the Tana and Juba rivers) from about December to April.

This study is based almost entirely on an analysis of dated specimens by months and some conclusions are very tentative, especially for eastern Africa. They should be substantiated or refuted by residents observing its disappearance from a particular locality; by obtaining definite breeding records; and by ringing as many as possible, both for recoveries and for weight changes.

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